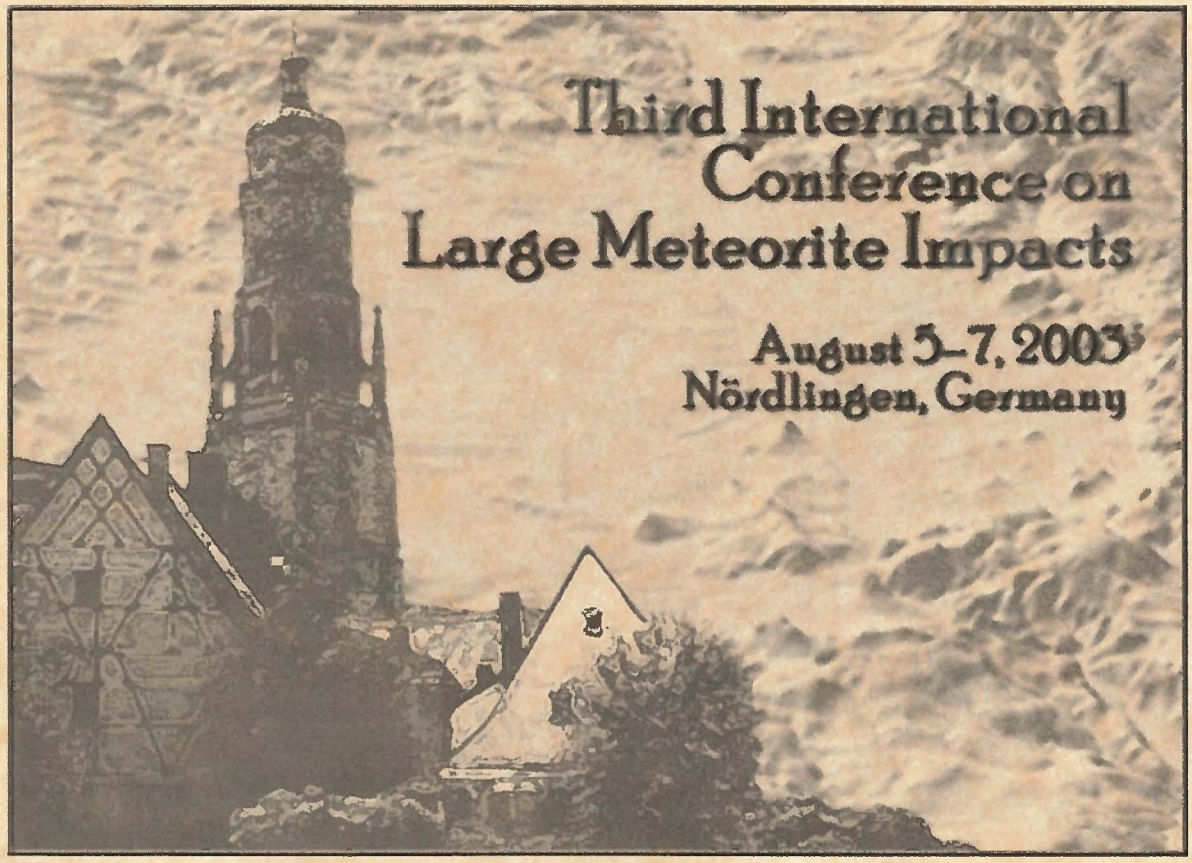

CONFERENCE PROGRAM

THIRD INTERNATIONAL CONFERENCE ON LARGE METEORITE IMPACTS

Technical Program

August 5–7, 2003
Nördlingen, Germany

— Sponsored by —

Lunar and Planetary Institute
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Meeting Calendar

Monday, August 4, 2003

6:00 – 10:00 p.m.	Rieskrater-Museum	Registration and Ice-Breaker

Tuesday, August 5, 2003

7:30 a.m.	Klösterle	Registration
8:00 a.m.	Klösterle	Welcome
8:30 a.m.	Klösterle	Terrestrial Craters I: News from Old Friends
12:00 – 1:30. p.m.	Hotel Klösterle	Lunch Buffet
1:30 p.m.	Klösterle	Modeling Impacts into Rocks and Water
5:30 p.m. – 7:00 p.m.	Gewölbe, Rathaus (Town Hall)	Poster Session (poster setup: 8:00 a.m; 12.00–1:30 p.m.)
7:30 p.m.	Town Hall	Official Reception

Wednesday, August 6, 2003

8:00 a.m.	Klösterle	Chicxulub and the K-T Boundary
12.00 – 1:30 p.m.	Hotel Klösterle	Lunch Buffet
1:30 p.m.	Klösterle	Shock Metamorphism
6:00 p.m. (leaving by bus)	Harburg	Tour of Märker Cement Plant and Bavarian Dinner

Thursday, August 7, 2003

8:30 a.m.	Klösterle	Terrestrial Craters II: Improved Insights and New Structures
12:00 – 1:30 p.m.	Hotel Klösterle	Lunch Buffet
1:30 p.m.	Klösterle	Planetary Perspectives
8:00 p.m.	Klösterle	Public Talk (in German)

* *Denotes speaker*

Tuesday, August 5, 2003
TERRESTRIAL CRATERS I: NEWS FROM OLD FRIENDS
8:30 a.m. Klösterle

Chairs: C. Koeberl
V. L. Masaitis

Gibson R. L. Reimold W. U. * Lana C. [INVITED]
Vredefort 2003 - Recent Progress, New Challenges
Detailed multidisciplinary analysis of the Vredefort Dome central uplift feature and surrounding Witwatersrand Basin has continued. An update of the last 5 years' results is provided and remaining challenges are outlined.
***(This talk combines two abstracts:* [#4082] and [#4036])**

Wieland F. * Gibson R. L. Reimold W. U. Lana C.
Chronology of Impact-related Deformation in the Central Uplift of the Vredefort Impact Structure, South Africa **[#4011]**
This study presents results of a structural investigation of the inner parts of the central uplift of the Vredefort impact structure.

Spray J. G. * Murphy A. J. Shaw C. S. J. Tuchscherer M. G.
Chilling Evidence for the Bulk Composition of the Impact Melt Sheet at Sudbury: Evidence from Offset Dykes **[#4101]**
The composition of the impact melt sheet of the Sudbury Structure is determined using chilled margin compositions from offset dykes. From this we model the evolution of the melt to yield a fractionally crystallized layered complex. An estimate of the original Ni-Cu ore volume is also made.

Giroux L. A. * Benn K.
Magnetic Fabric Studies of the Whistle and Parkin Offset Dykes from the Sudbury Impact Structure **[#4103]**
Magnetic fabric studies (AMS and ApARM) of the Parkin and Whistle Offsets are described. The fabrics measured may record the symmetry of flow of rocks or magmas thereby recording the emplacement of the Offsets and possibly the ore deposits they host.

Riller U. * Dressler B. O.
Structural Characteristics of the Sudbury Impact Structure, Canada, Point to a Protracted Tectonomagmatic Evolution of the Sudbury Igneous Complex **[#4045]**
Structural characteristics of the Sudbury Impact Structure, Canada, point to a primary parabolic geometry and prolonged tectono-magmatic evolution of the Sudbury Igneous Complex, a synformal impact-induced melt sheet. This can be best explained in terms of a protracted phase of crater modification.

Mungall J. E. Hanley J. J. * Ames D. E.
Mass Transfer in Large Bolide Impacts: Geochemical Evidence from the Sudbury Structure **[#4115]**
Our work has implications for the crustal-scale redistribution of matter during large impact events, which controlled the stability and longevity of the crust during the Hadean Eon.

Vishnevsky S. A. *
The Features of the Popigai: A Guiding Key for Large-Scale Impact Cratering Phenomena
Some features of complex cratering on the example of the Popigai astrobleme.
***(This talk combines three abstracts:* [#4023] and [#4024] and [#4034])**

Naumov M. V. * Lyakhnitskaya V. D. Yakovleva O. A.
Sulfide Mineralization in the 100-km Popigai Impact Structure, Russia **[#4040]**
Data on spatial range and composition of the sulfides from the Popigai structure are presented. Syngenetic (Co-Ni-Cu) and epigenetic (Cu-Pb-Zn-Ag) types of the sulfide mineralization are distinguished as characteristic of terrestrial craters.

Öhman T. * Lorenz K. Pesonen L. J. Badjukov D. Raitala J. Elo S. Ojala K.
Kara Impact Structure, Russia: Recent Developments in Petrophysical and Geochemical Studies **[#4071]**
Impactites from Kara structure show a clear relation between lithology and k & d. Hysteresis and Curie-points are also studied. Low Ti-magnetite is the main carrier of remanence. New satellite image analysis and siderophile element data are provided.

Burns E. * Sigurdsson H. Carey S. D'Hondt S.
Geochemistry of Accretionary Lapilli from a Cretaceous-Tertiary Impact Breccia, Guayal, Mexico **[#4113]**
Accretionary lapilli from a K/T impact breccia on Yucatan appear to have been largely replaced by diagenetic chert. Their REE patterns resemble bulk continental crust, but they are enriched in Mg and U.

Tuesday, August 5, 2003
MODELING IMPACTS INTO ROCK AND WATER
1:30 p.m. Klösterle

Chairs: B. A. Ivanov
T. Kenkmann

Melosh H. J. * [INVITED]
Numerical Modeling of Large Impacts **[#4105]**
Numerical models of impact cratering can be very helpful in understanding the mechanics of impact, but must be applied with caution. We currently need better knowledge of the response of rock materials to the high-pressure, high-strain rate flow regime induced by a large impact.

Svetsov V. V. *
Simulations of Very Large Impacts on the Earth **[#4133]**
Numerical hydrodynamics simulations have been made for vertical impacts of asteroids, from 100 to 1000 km in diameter, on the Earth. Impact velocities were from 10 to 20 km/s. The simulations were made in spherical coordinates using some modifications of the SOVA method.

Crawford D. A. * Barnouin-Jha O. S. Cintala M. J.
Mesoscale Computational Investigation of Shocked Heterogeneous Materials with Application to Large Impact Craters **[#4119]**
A methodology is described for investigating Monte-Carlo-like microscale heterogeneity in a continuum hydrocode without necessarily incurring high computational cost. Applications to large impact craters are discussed.

Barnouin-Jha O. S. * Cintala M. J. Crawford D. A.
Effects of Pre-Existing Target Structure on the Formation of Large Craters **[#4106]**
This study combines laboratory and numerical studies to explore how the shapes of large-scale craters and the mechanics responsible for melt generation are influenced by both broad and small-scale structures present in a target prior to impact.

Wünnemann K. *
Numerical Modelling of Impact Crater Collapse Utilising Different Constitutive Equations **[#4044]**
Different rheology descriptions of rocks (acoustic fluidisation, dry friction, thermal softening) are utilised in a numerical model of the cratering process to investigate the modification of the transient cavity.

Collins G. S. * Ivanov B. A. Turtle E. P. Melosh H. J.
Numerical Simulations of Silverpit Crater Collapse **[#4126]**
A numerical investigation of the formation of the Silverpit crater and its peculiar multi-ring structure.

Hawke P. J. *
Some Ring-like Magnetic Anomalies in Impact Structures and Their Possible Causes **[#4064]**
Three examples of ring-like magnetic anomalies in impact craters are presented. Four possible causes are proposed: impact melt, hydrothermal alteration, displacement of a flat-lying magnetic unit, and post-impact deposition of magnetic sediments.

Weiß R. * Wünnemann K. Bahlburg H.

Oceanic Impacts, Tsunamis, and the Influence of the Water Depth on the Quantity and Characteristics of the Generated Waves **[#4081]**

Oceanic impacts produce tsunamis. The water depth strongly affects the quantity and characteristics of the generated waves. Numerical modeling of impacts and tsunami wave propagation deliver insights into the tsunami wave generation and propagation.

Shuvalov V. V. *

Mechanisms of Tsunami Generation by Impacts **[#4131]**

The purpose of this study is to analyze different regimes of underwater crater formation and tsunami generation by means of numerical modelling of the three terrestrial marine target impacts: Eltanin, Lockne, and Mjølnir.

Tuesday, August 5, 2003
POSTER SESSION
5:30 p.m. Gewölbe, Rathaus (Town Hall)

The abstracts included in the poster session are listed on pages 14 through 20 of this program booklet.

Wednesday, August 6, 2003
CHICXULUB AND THE K-T BOUNDARY
8:00 a.m. Klösterle

Chairs: B. Dressler
W. U. Reimold

Ivanov B. A. *
Large Impact Crater Modeling: Chicxulub **[#4067]**
To start the process of more exact modeling we present the first step using the "standard" model based on first principles and laboratory data.

Hildebrand A. R. * Millar J. D. Pilkington M. Lawton D. C.
Chicxulub Crater Structure Revealed by Three Dimensional Gravity Field Modeling **[#4121]**
Three dimensional gravity field modeling reveals Chicxulub crater structure largely consistent with previous 2D models. Central structures, the central uplift and melt sheet, are particularly well delineated.

Stöffler D. * Ivanov B. A. Hecht L. Kenkmann T. Schmitt R. T. Salge T. Schönian F. Tagle R. Weseler S. Wittmann A.
Origin and Emplacement of the Impact Formations at Chicxulub, Mexico, with Special Emphasis on the Yax-1 Deep Drilling **[#4092]**
Results of the ICDP deep drilling and other drillings at Chicxulub impact crater are compared with numerical modeling of the crater formation, cavity collapse, and ejecta emplacement.

Kring D. A. * Zurcher L. Hörz F.
Impact Lithologies and Post-Impact Hydrothermal Alteration Exposed by the Chicxulub Scientific Drilling Project, Yaxcopoil, Mexico **[#4112]**
The Yaxcopoil-1 borehole recovered an incredibly melt-rich sequence of impact breccias that was subsequently altered by an impact-driven hydrothermal system.

Artemieva N. A. * Stöffler D. Hecht L, Schmitt R. T. Tagle R.
Interaction of the Ejecta Plume and the Atmosphere During the Deposition of the Uppermost Suevite Layers at the YAX-1 Drilling Site, Chicxulub, Mexico **[#4063]**
The upper suevite at the YAX-1 drilling core is the result of early ejecta deposition through atmosphere with minor influence of a vapor plume a few hours after an impact.

Rebolledo-Vieyra M. * Urrutia-Fucugauchi J.
Magnetostratigraphy of the K/T Boundary from Yaxcopoil-1 Borehole, Chicxulub Impact Crater **[#4012]**
We propose that the K/T boundary in Yaxcopoil-1 is located at the contact between the impact series and the Tertiary sedimentary sequence, at 794.43 m and not at the last occurrence of redeposited suevite at 794 m proposed by other authors.

Stinnesbeck W. * Keller G. Adatte T. Harting M. Stüben D.
Yaxcopoil-1 and the Chicxulub Impact **[#4037]**
Yaxcopoil-1 is located outside the transient Chicxulub crater cavity and predates the larger K-T boundary impact event by about 300 ky.

Schönian F. * Kenkmann T. Stöffler D.
Internal Shearing and Subsurface Erosion from the Chicxulub Ejecta Blanket (Albion Fm.), Quintana Roo, Mexico **[#4128]**
Internal shearing and subsurface erosion acted during the emplacement of the Albion Fm. This observation leads to new results on the emplacement process and gives alternative explanations for some principal features of the Chicxulub ejecta blanket.

Kyte F. T. *

Comparison of Distal Impact Spherules from KT Boundary and Late Eocene Deposits **[#4118]**

Distal impact spherules from both KT boundary and late Eocene cpx layers have similarities that probably reflect formation by similar processes during impact-glassy microtektites from low velocity impact melt and crystallized spherules from different regions of the impact plume.

Kearsley A. T. * Graham G. A. Jones A. P. Friend C. R. L.

Spinel Heterogeneity Within Individual Impact Spherules from the K/T Boundary: Implications for Modeling of Impact Plume Conditions **[#4104]**

Nickel-bearing spinels are common indicators of major impact, used to infer evolving conditions during plume migration. Zoned spinels of complex shape in altered impact spherules show a trend of compositional change at odds with current models.

Keller G. * Stinnesbeck W. Adatte T. Stüben D. Kramar U.

Chicxulub Impact Predates K-T Boundary: Supports Multiple Impact Hypothesis **[#4020]**

Yaxcopoil 1, drilled on the inner flank of the Chicxulub crater, reveals a pre-K-T age of about 65.3 Ma for this impact based on biostratigraphic, sedimentologic and geochemical investigations.

Wednesday, August 6, 2003
SHOCK METAMORPHISM
1:30 p.m. Klösterle

Chairs: D. Stöffler
J. G. Spray

Thoma K. * [INVITED]
Techniques of Shock Wave Experiments and Determination of Hugoniot Data of Solids **[#4134]**
The current techniques used in laboratory shock wave compression of heterogeneous solids will be reviewed with special emphasis on materials used in industrial applications and work done at the EMI. These techniques can also be fully applied to geological materials (minerals and rocks).

Osinski G. R. * Grieve R. A. F. Spray J. G.
Hypervelocity Impact into Carbonates: Products and Processes **[#4030]**
The response of carbonates to hypervelocity impact remains poorly understood. Here, we present an up-to-date review of evidence from shock experiments, phase relations, and the terrestrial impact cratering record.

Agrinier P. * Martinez I.
Large Meteorite Impact on Sediments: Where Does the Lime Go? **[#4042]**
We describe the environmental consequences of the dispersion of lime, on the Earth surface after a large meteorite impact on carbonate and anhydrite-rich sediments.

Deutsch A. * Langenhorst F. Hornemann U. Ivanov B. A.
On the Shock Behavior of Anhydrite and Carbonates — Is Post-Shock Melting the Most Important Effect? Examples from Chicxulub **[#4080]**
We address the shock behavior of sulfate and carbonates using experimental data, and observations from Chicxulub drill cores.

Skála R. * Hörz F.
Experimentally Shock-loaded Anhydrite: Unit-Cell Dimensions, Microstrain and Domain Size from X-Ray Diffraction **[#4093]**
Unit-cell dimensions, peak broadening, microstrain and domain size refined from X-ray powder diffraction patterns of anhydrite experimentally shock-loaded to pressures ranging for 10 to 65 GPa are discussed.

Trepmann C. A. * Spray J. G.
Differential Stress-controlled Deformation of Quartz During and After Hypervelocity Impact — Microstructural Evidence from the Charlevoix Impact Structure, Quebéc, Canada **[#4026]**
Differential stress-controlled shock effects in quartz from crystalline target rocks are used to gain information on the stress field during shock in distal regions of a crater and to elucidate deformation processes during post-shock relaxation.

Langenhorst F. * Dressler B.
First Observation of Silicate Hollandite in a Terrestrial Rock **[#4046]**
We report the first discovery of silicate hollandite in a terrestrial impact rock. Similar to heavily shocked meteorites, the silicate hollandite occurs in shock veins, i.e. frictional melt zones. It crystallized from this melt during decompression.

Dubrovinskaia N. * Dubrovinsky L. Langenhorst F.
Synthesis of Nanocrystalline Diamond and 6H Diamond Polytype **[#4065]**
We report on the synthesis of a bulk sample of nanocrystalline cubic diamond and a new 6H diamond-like polytype with crystallite sizes of 8–12 nm.

Gerasimov M. V. * Yakovlev O. I. Dikov Yu. P. Wlotzka F.

Chemical Differentiation of Impact-produced Melt Droplets: Experiments and Observation **[#4089]**

The chemical composition of impact melts is controlled by mixing and volatilization processes. Comparison of experimental and naturae impact melts shows similar differentiation trends.

Walton E. L. * Spray J. G.

Localized Shock Excursions in Martian Meteorites: The Los Angeles Basaltic Shergottite and North West Africa 1183 Olivine-Phyric Shergottite **[#4097]**

Shock damage in LA and NWA1183 is manifest as effects recorded in the bulk sample, and localized T and P excursions. Studies of shock metamorphism in the SNCs help to constrain launch conditions, as well as furthering our understanding of the origin of extreme shock excursions.

Thursday, August 7, 2003
TERRESTRIAL CRATERS II:
IMPROVED INSIGHTS AND NEW STRUCTURES
8:30 a.m. Klösterle

Chairs: J. Pohl
A. Deutsch

Milkereit B. * [INVITED]
Another Look at the Geophysical Signature of Large Terrestrial Impact Structures **[#4109]**
Most terrestrial impact craters exhibit geophysical signatures. Integration of results from seismic, potential field, remote sensing, exploration drilling and numerical modeling constrain the size and shape of transient craters and provide images of impact basin morphology.

Kenkmann T. * Ivanov B. A.
The Upheaval Dome Impact Crater, Utah: Combining Structural and Numerical Data to Constrain Age, Diameter, and Amount of Erosion **[#4068]**
A new method is presented to define a lower pressure limit for the rocks of the central uplift. These and other structural data are used as a frame for numerical modeling. A Cretaceous age and a diameter of 7–7.5 km are derived for the impact.

Scherler D. * Jahn A. Kenkmann T.
Structural Investigations in the Central Uplift of the Upheaval Dome Impact Crater, Utah **[#4072]**
We are presenting preliminary results of a field campaign in the innermost part of the Upheaval Dome Structure. Using GIS-applications we combined geological field data with a DTM to visualize the structural features.

Powars D. S. * Gohn G. S. Catchings R. D. Horton J. W. Jr. Edwards L. E.
Recent Research in the Chesapeake Bay Impact Crater, USA — Part 1. Structure of the Western Annular Trough and Interpretation of Multiple Collapse Structures **[#4053]**
Interpretation of marine and land based seismic reflection data indicates numerous extensional collapse structures are present across the western annular trough. These collapse structures appear to be concentrated into three narrow structural rings.

Horton J. W. Jr.* Gohn G. S. Edwards L. E. Self-Trail J. M. Powars D. S. Kunk M. J. Izett G. A.
Recent Research in the Chesapeake Bay Impact Crater, USA — Part 2. Reworked Ejecta and Impact Debris **[#4051]**
Reworked ejecta and debris in drill cores from the Chesapeake Bay impact crater include shocked minerals, damaged microfossils, and crystalline rock fragments. The impact provides a unique tool for sampling buried terranes.

Théry J. M. * Crosta A. Veto Akos E. Bilal E. Gal-Solymos K. Dransart E.
New Laboratory Results on Field Sections at the Impact Crater of Araguainha (MT, GO, Brazil). Area of Proximal and Distal Impact Ejecta, Including Microspherules Dated from the End of Permian **[#4096]**
The presence of ejecta from the Araguainha impact at the Permian-Triassic Boundary (PTB) suggests a large area of distribution of fallout process. The microspherules we found around the crater are believed a tool as stratigraphic marker.

Gersonde R. * Kyte F. T. Frederichs T. Bleil U. Kuhn G.
New Data on the Late Pliocene Eltanin Impact into the Deep Southern Ocean **[#4094]**
Eltanin is the only known deep-ocean (~5 km) impact. A second expedition to the impact area in 2001 has extended the study area to 80,000 km^2, with detailed bathymetric, seismic and sediment core data. Impact age is 2.51 Ma and projectile size >1 km.

Lindström M. *

An Array of Offshore Impact Craters on Mid-Ordovician Baltica **[#4029]**

Five Ordovician craters were excavated offshore on paleocontinent Baltica, at water depths in the range 75–750 m indicated by crater structures and contents, as well as by stratigraphy. The craters provide fundamental geologic information.

Turner P. Sherlock S. C. * Clarke P. Cornelius C.

A New Mid- to Late-Maastrichtian Impact in the Raton Basin 100m Below the K/T Boundary **[#4087]**

We report a new impact from the Raton Basin, south central Colorado that is 100 m below the well-documented Raton K/T deposit layer in the Berwind Canyon.

Hamill B. J. *

A Triple Complex of Low-Angle Oblique Impact Structures in the Midland Valley of Scotland **[#4027]**

A triple complex of low-angle oblique impact structures stretches across >50 km of the Scottish Midland Valley and dates from the end of the Carboniferous. The multiple impacts may have contributed to the destruction of the forests of Laurentia and Laurussia.

Thursday, August 7, 2003
PLANETARY PERSPECTIVES
1:30 p.m. Klösterle

Chairs: H. J. Melosh
D. A. Kring

Barlow N. G. *
A New View of Martian Impact Craters **[#4018]**
New data from Mars Global Surveyor and Mars Odyssey instruments are allowing us to investigate the formation mechanisms of martian impact craters and their associated features in a level of detail previously unavailable.

Versh E. * Kirsimäe K. Jõeleht A. Plado J.
Impact Induced Hydrothermal System at Kärdla Impact Crater: Development and Biological Consequences **[#4120]**
Modeling, mineralogical and fluid inclusion data suggest maximum post-impact temperatures of 400°–600°C. In the central uplift area conditions for thermophilic microorganisms (<100°C) were reached shortly after the impact and lasted for ~1500 years.

Nelson M. J. * Newsom H. E.
Impact Hydrothermal Alteration of Terrestrial Basalts: Explaining the Rock Component of the Martian Soil **[#4099]**
Low water/rock alteration studied in terrestrial impact craters can result in Fe-rich alteration phases. Erosion of such altered material on Mars could contribute to the rock component of the martian soil.

Pierazzo E. * Artemieva N. A. Ivanov B. A.
Starting Conditions for Hydrothermal Systems Underneath Martian Craters: 3D Hydrocode Modeling **[#4102]**
We present preliminary results of 3D simulations of impacts on Mars aimed at constraining the initial conditions for the onset and evolution of hydrothermal system on the red planet.

Warren P. H. *
Lunar Prospector Data Imply an Age of 4.1 Ga for the Nectaris Basin, and Other Problems with the Lunar "Cataclysm" Hypothesis **[#4129]**
The age of Nectaris is far more likely 4.1 Ga than the commonly accepted value of 3.9 Ga. Other problems with the "cataclysm" hypothesis will also be discussed.

Whitehead J. * Kelley S. Sherlock S. C. Grieve R. A. F. Spray J. G. Trepmann C. A.
Structural and Geochronologic Constraints on the Timing of the Charlevoix Impact, Quebec, Canada **[#4084]**
We present new geochronological data for the 54 km-diameter Charlevoix impact structure in Canada. The data indicates that the structure is likely Ordovician, not Devonian and, therefore, is unrelated to any Frasnian/Famennian extinction event.

Elston W. E. *
Bushveld Complex, South Africa: Impact and Plume Models Reconciled **[#4032]**
Bushveld impact and mantle plume scenarios are reconciled by a hydrodynamic model for an impact-induced plume. Parts of the transient cavity wall preserve impact evidence. Decompressional mafic and siliceous plume-head melts pooled in a 250-km outer ring.

Rampino M. R. * Caldeira K.
Strangelove Ocean and Deposition of Unusual Shallow-Water Carbonates After the End-Permian Mass Extinction **[#4077]**
The mass die-off at the time of the end-Perman extinction affected carbonate deposition and ocean chemistry. We modeled the effects of a sudden crash of ocean productivity and the production of Stangelove Ocean conditions with an ocean-atmosphere carbon cycle model.

Schmidt G. *

Composition of the Late Influx of the Earth **[#4006]**

Many authors explain the relative "high" abundances of HSE and their broadly chondritic proportions in the Earth's mantle (PUM) by the addition of a late chondritic veneer after core formation. The HSE systematics show that the late veneer closely resembles E-chondrites or LL-chondrites.

Bland P. A. * Artemieva N. A.

The Impact Rate of Small Asteroids at the Earth's Surface **[#4047]**

We used a numerical model to define the mass-velocity-distribution of fragments at the surface for a given pre-entry mass and impactor type. The data allows the known impactor flux at the upper atmosphere to be extrapolated to a flux at the surface.

POSTER SESSION ABSTRACTS

Terrestrial Craters

Rondot J.

Mass-Movement in Geological Strata of Some Astroblemes **[#4007]**

Mass-movement of parautochthonous rocks, which have preserved their internal coherence, but are separated by faults, provides indications on their displacement. Collapsed rocks surround a central uplift, which represent less than a quarter of their surface.

L'Heureux E. Ugalde H. Milkereit B. Eyles N. Boyce J. Morris W.

Magnetic, Gravity and Seismic Contraints on the Nature of the Wanapitei Lake Impact Crater **[#4016]**

Vertical dikes were used as markers in the identification of a medium sized impact crater located in Wanapitei Lake, Canada. Results of a magnetic and seismic survey indicate that the crater is much smaller than originally proposed (3 to 4 km).

Wieland F. Reimold W. U. Gibson R. L.

New Evidence Related to the Formation of Shatter Cones; with Special Emphasis on Structural Observations in the Collar of the Vredefort Dome, South Africa **[#4008]**

New field observations on shatter cones from the Vredefort Dome give new insight into the formation of this impact deformation phenomenon. The orientations of shatter cone apeces are not uniform with regard to the center of the structure and show a variety of prominent directions.

Newsom H. E. Hagerty J. J.

Evidence for Impact-induced Hydrothermal Alteration at the Lonar Crater, India, and Mistastin Lake, Canada **[#4116]**

Impact crater hydrothermal alteration at the Lonar crater, India and Mistastin Lake, Canada consists of Fe-rich clays. These clays could be similar to alteration material present on Mars.

Morrow J. R. Sandberg C. A.

Late Devonian Alamo Event, Nevada, USA; Multiple Evidence of an Off-Platform Marine Impact **[#4055]**

Multiple lines of evidence document that the Alamo Event resulted from a cometary impact into an off-platform marine setting, 150 km north of present-day Las Vegas, Nevada, USA, during early Late Devonian (early Frasnian punctata Zone) time.

Mungall J. Milkereit B. Grieve R. Lesher C. M.

Probing the Sudbury Structure at Depth — An ICDP Proposal **[#4108]**

The Sudbury structure is the largest and best-exposed remnant of a large meteorite impact structure on earth. It hosts one of of the world's largest concentrations of magmatic Ni-Cu-Pt-Pd-Au mineralizations and has produced more than $100 billion worth of metal in over a century in production.

Koeberl C. Milkereit B. Overpeck J. Scholz C.

Proposed Scientific Drilling at the Bosumtwi Impact Structure, Ghana, West Africa **[#4107]**

The 10.5 km diameter Bosumtwi impact crater has an age of 1.07 Ma and was excavated in lower greenschist facies metasediments of the 2.1–2.2 Ga Birimian Supergroup. A deep drilling project has been approved by the International Continental Scientific Drilling Program (ICDP).

Koeberl C. Rampino M. R. Jalufka D. A. Winiarski D. H.

A 2003 Expedition into the Libyan Desert Glass Strewn Field, Great Sand Sea, Western Egypt **[#4079]**

Libyan Desert Glass is an enigmatic impact glass found in the western desert of Egypt. We undertook an expedition to collect a number of specimens that might contain a meteoritic component.

Howard K. T. Haines P. W.

Distribution and Abundance of Darwin Impact Glass **[#4057]**

We have constrained the dimensions of the Darwin glass strewn field and estimated the abundance of glass. Results show that relative to the size of the suspected source crater more glass has been ejected and to greater distances than in any other known impact.

Krull A. E. Lowe D. R. Byerly G. R.

Inferred Primary Compositions of Archean Spherules Formed by the Condensation of an Impact-produced Rock Vapor Cloud, Barberton Greenstone Belt, South Africa **[#4056]**

In this study we estimate the original mineralogy of Archean spherules in the S3 layer of the Barberton Greenstone Belt, South Africa, through an analysis of preserved textures, compositions, and alteration products.

Seydoux-Guillaume A.-M. Deutsch A. Wirth R.

Al-rich Orthopyroxenes in Impact Melt Coatings of Gneiss Bombs from Popigai, Russia — New ATEM Data **[#4085]**

This ATEM study provide chemical and structural data for highly exotic orthopyroxenes in impact melt glass, having Al_2O_3 contents of up to 13 wt.%.

Masaitis V. L. Mashchak M. S. Naumov M. V.

Original Diameter and Depth of Erosion of the Popigai Impact Crater, Russia **[#4039]**

Based on topographic, structural, and geophysical data, the diameter of the Popigai impact structure is confirmed to be 100 km. The depth of erosion of the crater varies sharply from 100–200 to 300–500 m.

Osinski G. R. Grieve R. A. F. Spray J. G.

The Nature of the Groundmass of Surficial Suevites from the Ries Impact Structure, Germany **[#4022]**

We present the results of a detailed field, optical, and analytical SEM study of the groundmass or surficial suevites from the Ries impact structure. The results of this study reveal that the groundmass comprises a series of impact-generated melts.

Artemieva N. A.

Distal Ejecta from the Ries Crater — Moldavites and Projectile **[#4050]**

Numerical modeling of tektites ejection, atmospheric flight and deposition at the surface is considered. The calculated size of the strewn field is an order of magnitude larger than the real one with average density of 0.01–0.1 kg/m^2.

Tsikalas F. Faleide J. I.

Mjølnir Marine Crater Resulting from Oblique Impact: Compelling Evidence **[#4005]**

Diagnostic structural and geophysical signatures clearly demonstrate that the 40-km-diameter Mjølnir marine crater resulted from an oblique impact from south/southwest at a 45–50 degrees angle from the horizontal.

Gersonde R. Kyte F. T. Frederichs T. Bleil U. Kuhn G.

Reports of Discovery of the "Eltanin Crater" are Contradicted by Data **[#4095]**

Recent abstracts have reported the discovery of a 132 km crater on the ocean floor possibly related to the Eltanin impact. We state categorically that this is contradicted by our extensive exploration and analysis of this impact event.

Ivanov B. A. Shuvalov V. V. Lindström M.

The Lockne Crater: Shock Compression of Basement Rocks and Ejected Material **[#4066]**

We present results of the numerical modeling with estimates of shock level and melt fraction in ejecta of the submarine Lockne crater.

Modeling

Shuvalov V. V.

Cratering Process After Oblique Impacts **[#4130]**

The purpose of this paper is to study the cratering process after an oblique impact using direct numercial simulations. I consider impacts of 0.5-km- and 8-km-radius asteroids, which result in formation of complex craters with central peak (0.5 km) and peak ring (8 km).

Ugalde H. A. Artemieva N. Milkereit B.

Numerical Modeling and Petrophysical Constraints on the Magnetic Signature of Impact Structures **[#4017]**

The magnetic anomalies over impact structures are analyzed, and constrained by paleomagnetic data and numerical modelling. The processes that lead to magnetic anomalies on impact structures are addressed and constrained.

Ivanov B. A. Melosh H. J.

Large Scale Impacts and Triggered Volcanism **[#4062]**

The aim of this publication is to critically examine some frequently cited mechanisms of impact energy transformation into a trigger for terrestrial volcanism and magmatism.

de Niem D.

A Model of Early Condensate Composition in Impacts **[#4069]**

The evolution of composition and temperature of early condensates in a terrestrial impact is investigated numerically.

Lorenz R. D.

On the Decoupling of Microtektites from the Ejecta Plume **[#4114]**

I aim to connect the distribution of launch parameters of microtektites (velocity, angle, altitude) with the particle size, consistent with ejecta thickness relationships and the shapes of venusian parabolae: this link should shed light on the plume expansion and particle launch process.

Chicxulub

Schmitt R. T. Wittmann A. Stöffler D.

The ICDP Drill Core Yaxcopoil-1, Chicxulub Impact Crater, Mexico: Shock Metamorphism of the Impactite Units (794–894 m) **[#4061]**

In this study we focus on the shock metamorphism of the impactites (794–894 m) of the ICDP drilling Yax-1. The full range of the progressive stages of shock metamorphism is observed in silicate grains. Yax-1_884.92 m, which may contain carbonate melt, is described in detail.

Wittmann A. Kenkmann T. Schmitt R. T. Hecht L. Stöffler D.

Impact Melt Rocks in the "Cretaceous Megablock Sequence" of Drill Core Yaxcopoil-1, Chicxulub Crater, Yucatan, Mexico **[#4125]**

We present geochemical and petrographic data on impact melt rocks in YAX-1.

Schönian F. Salge T. Stöffler D. Urrutia Fucugauchi J.

Additional Observations on the Impact Breccias of the Chicxulub Ejecta Blanket from the UNAM-7 Drill Core, Yucatán, Mexico **[#4132]**

Abundance of melt in both units of impact breccias of the UNAM-7 drill core (Chicxulub) and the absence of a sharp contact implies that they can't directly be compared with the Bunte Breccia/Suevite of the Ries ejecta blanket (Germany).

Kenkmann T. Wittmann A. Scherler D. Stöffler D.
The Cretaceous Sequence of the Chicxulub YAX-1 Drillcore: What is Impact-derived? **[#4075]**
The question is addressed whether the Cretaceous rocks of YAX-1 represent a continuous undisturbed sequence or an impact-disrupted megablock unit. New data indicate impact-induced fragmentation, dike formation, and localized shock metamorphism.

Lounejeva E. Elias-Herrera M. Ortega-Gutiérrez F. Cedillo-Pardo E.
Origin of Epidote from the Impact Melt of the Chicxulub Crater, Mexico **[#4054]**
Magmatic epidote in the Chicxulub melt rocks was identified and considered on textural-chemical grounds to be of low pressure origin.

Schulte P. Kontny A. Stinnesbeck W.
"Fingerprinting" Target Lithologies of the Chicxulub Crater in Ejecta from NE Mexico and Texas: Yucatán Subsurface Revisited **[#4090]**
Mineralogical and compositional data of Chicxulub ejecta deposits in NE Mexico and Texas imply a suite of mafic to intermediate precursor lithologies, including a specific potassium rich rock type. This suggests a complex basement of the Chicxulub crater in Yucatán.

Adatte T. Keller G. Stinnesbeck W. Harting M. Stüben D. Kramar U.
Multiple Impacts Across the Cretaceous-Tertiary Boundary **[#4048]**
Multiple impacts (comet shower?) across the K/T Boundary are most consistent with current evidence of spherules, Ir anomalies and climate change during the late Maastrichtian to early Danian and support three impact events.

King D. T. Jr. Petruny L. W. Pope K. O. Ocampo A. C.
Possible Modes of Emplacement of Coarse Impactoclastic Ejecta (Breccia) from a Large Body Impact on Earth: Chicxulub Ejecta in Belize, Central America **[#4052]**
The Albion impactoclastic breccia (Albion Island, Belize) is a very coarse, carbonate clast-rich unit that was formed by ballistic sedimentation and ejecta debris-flow processes associated with the Chicxulub impact event approximately 325 km away on the Yucatán Peninsula of México.

Gulick S. P. S. Christeson G. L. Morgan J. V. Warner M. R. Barton P.
Urrutia-Fucugauchi J. Melosh H. J.
Active Seismic and Drilling Studies of the Chicxulub Impact Crater: A Status Report **[#4019]**
A status report on the results of recent studies and plans for upcoming international efforts at imaging the Chicxulub crater with seismic methods and direct sampling using continental and oceanic drilling platforms.

Shock Metamorphism

Skála R. Hörz F. Langenhorst F.
Diaplectic Glass Content in Experimentally Shock-loaded Quartz Determined by X-Ray Powder Diffraction **[#4033]**
Diaplectic glass content in quartz experimentally shock-loaded in the range between 8 and 33 GPa is determined using integral intensity measurements for the (101) diffraction line of quartz in X-ray powder diffraction patterns.

Dubrovinsky L. Dubrovinskaia N.
Phase Relations in TiO_2 at Elevated Pressures and Temperatures **[#4060]**
Combined theoretical and experimental investigations have led to the discovery of new polymorphs of titanium dioxide and revealed phase relations in TiO_2 system.

Fel'dman V. I. Sazonova L. V. Kozlov E. A. Zhugin Ju. N.
Transformation of Some Minerals in Shock Wave — Comparison of Natural and Experimental Data **[#4014]**
There are some differences in natural and experimental shock-thermal aggregates (STA) in minerals of target rocks.

Hertzsch J.-M.
Shock Effects at Inclined Material Interfaces — Numerical Simulations **[#4031]**
Computer simulations of shock waves passing inclined material interfaces have been performed and the effect of the angle between shock wave plane and interface on shock-induced temperature changes has been examined.

Elwood Madden M. E. Hörz F. Bodnar R. J.
Experimental Simulation of Shock Reequilibration of Fluid Inclusions During Meteorite Impact **[#4013]**
The effects of shock events on fluid inclusions in quartz were investigated experimentally. Results show that inclusion textures undergo a systematic evolution with increasing shock pressures leading to complete destruction of inclusions above 10 GPa.

New Craters

Zegers T. E. Ocampo A.
Vaalbara and Tectonic Effects of a Mega Impact in the Early Archean 3470 Ma **[#4038]**
Recently, impact layers have been recognized in the Early Archean (3.47 and 3.2 Ga) sequences of the Pilbara and Kaapvaal Cratons. We will present results on the paleogeography of the two cratons in the Archean, and discuss potential impact structures and impact melt.

Ormö J. Rossi A. P. Komatsu G.
The Sirente Crater Field: Outline, Age, and Evidence for Heating of the Target **[#4070]**
We present a more complete outline of the Sirente crater field, new age datings, and evidence for heating of the target.

Pesonen L. J. Donadini F. Salminen J. Lehtinen M.
The Suvasvesi South Structure, Central Finland: Further Evidences to the Discovery of Impact **[#4074]**
The summer 2002 field research in the Suvasvesi S area led to the discovery of new impact evidence. Bathymetric, geophysical data and thin section studies of the discovered melt boulders confirm that Suvasvesi S is a new impact structure in Finland.

Hamill B. J.
The Loch Leven Crater: Anatomy of a Low-Angle Oblique Impact Structure **[#4041]**
Rocks of the Loch Leven crater show properties which, though similar to those in conventional circular craters, display some subtle differences and are asymmetrically distributed in the structure.

Evans K. R. Rovey C. W. II Mickus K. L. Miller J. F. Plymate T. G. Thomson K. C.
Weaubleau-Osceola Structure, Missouri: Deformation, Event Stratification, and Shock Metamorphism of a Mid-Carboniferous Impact Site **[#4111]**
The Weaubleau-Osceola structure is a newly recognized 19-km diameter impact site in southwestern Missouri. Shocked quartz, deformational striae, intense folding, and event stratification provide evidence of its impact origin.

Brookfield M. E.
The Eastern Hudson Bay Arc, Canada: Part of a Multi-Ringed Basin **[#4010]**
The best available explanation of the eastern arc of Hudson Bay is as part of an early Proterozoic multi-ringed impact basin, particularly when closing the James Bay rift aligns the Sutton ridges to form an arc of over 240°, or two thirds of a circle, with a radius of 230 km.

Rocca M. C. L.

Bajo Hondo, a Very Puzzling Crater in Chubut, Patagonia, Argentina

Bajo Hondo is a very puzzling 4.8 km crater in Chubut, Argentina. The author believes it is in fact a gigantic simple impact crater on a basaltic plateau like the Lonar Lake impact crater in India.

***(This poster combines three abstracts:* [#4001] and [#4002] and [#4003])**

Burba G. A.

Effect of the Supposed Giant Impact Crater on the Geologic Evolution of the Ural Mountain Range **[#4117]**

Middle-Ural Ring Structure (MURS) is located in Russia, between 54° and 59° N, 52° and 62° E. Its diameter is 400 km. MURS curves the rectilinear Ural Range eastward. It looks like MURS may have been a stable obstacle during the formation of the Ural Mountains.

Miura Y. Koga N. Nakamura A.

Impact Drilled Samples of Buried Crater Structure from Takamatsu-Kagawa District in Japan

The Takamatsu-Kagawa structure is confirmed by surface and drilled samples as impact crater in Japan that was deformed by later volcanic depression.

***(This poster combines two abstracts:* [#4122] and [#4127])**

Shukla A. D. Bhandari N. Shukla P. N.

Shocked Quartz at the Permian-Triassic Boundary (P/T) in Spiti Valley, Himalaya, India **[#4059]**

Shocked quartz grains with planar deformation features from the P/T boundary sediments of Spiti Valley, Himalaya, have been found which support an impact event at the end-Permian.

Planetary Craters/Early Earth

Neal J. Barlow N. G.

Comparison Study of Layered Ejecta Morphologies Surrounding Impact Craters on Ganymede and Mars **[#4021]**

We are studying the similarities and differences between the layered ejecta morphologies on Ganymede and Mars to investigate how impact into increasing amounts of target ice affect these ejecta morphologies.

Takata T. Hori S.

Locations and Compositions of Mare Ponds in South Pole-Aitken Basin on the Moon and Its Implication to the Impact Tectonics **[#4058]**

Locations and compositions of mare in South Pole-Aitken (SPA) basin are correlated to the structure of the SPA crater. The coverage of mare indicates mare extrusions exist inside and along the rings. The lack of Hi-Ti basalt in SPA could result from the subsurface structure.

Lahtela H. Kostama V.-P. Aittola M. Öhman T. Raitala J.

The Lacustrine Reservoirs in Hellas Impact Basin Region **[#4073]**

The Hellas Basin in the southern hemisphere of Mars is rich in details of past fluvial and lacustrine activity. Studies of these reservoirs will reveal additional details of Martian erosion, deformation and sedimentation.

Whitehead J. Grieve R. A. F. Garvin J. B. Spray J. G.

The Dependence of Target Properties Upon Fresh Crater Morphologies on Mars **[#4086]**

The Viking images of ~900 martian craters were analyzed in order to test any correlations between their morphologies and the interpreted target geologic units.

Korteniemi J.

Collapses and Depressions Post-Dating Crater Formation in Martian Impact Structures — Distribution and Consequences **[#4091]**

Craters with distinctive depressions on their floors can be found in clusters around the highlands of Mars. The collapses always form inside the crater, some following the circular shape. These craters outline areas of local distinctive geology.

Pechernikova G. V. Davidenko I. W.

Estimations of Axial Moment of the Growing Earth **[#4015]**

Results of calculations of mass increase of the planet and corresponding planetary spin K in the new model are presented. Model combines analytical and statistical approaches in the framework standard scenario of the solar system formation.

Vityazev A. V. Pechernikova G. V. Bashkirov A. G.

Early Accretion and Differentiation of Protoplanetary Bodies and Hf-W Chronometry **[#4035]**

Hf-W data can be interpreted as evidence for early differentiation and forming of primitive cores and mantles in large planetesimals tens of Ma before their integration into four terrestrial planets. Nb-Zr data are not in conflict with this scenario.

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Ocampo A. C.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Ocampo A. C.	New Craters Posters, Tue, p.m., Gewölbe, Rathaus
Öhman T.*	Terrestrial Craters I, Tue, a.m., Klösterle
Öhman T.	Planetary Craters Posters, Tue, p.m., Gewölbe, Rathaus
Ojala K.	Terrestrial Craters I, Tue, a.m., Klösterle
Ormö J.	New Craters Posters, Tue, p.m., Gewölbe, Rathaus
Ortega-Gutiérrez F.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Osinski G. R.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Osinski G. R.*	Shock Metamorphism, Wed, p.m., Klösterle
Overpeck J.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Pechernikova G. V.	Planetary Craters Posters, Tue, p.m., Gewölbe, Rathaus
Pesonen L. J.	Terrestrial Craters I, Tue, a.m., Klösterle
Pesonen L. J.	New Craters Posters, Tue, p.m., Gewölbe, Rathaus
Petruny L. W.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Pierazzo E.*	Planetary Perspectives, Thu, p.m., Klösterle
Pilkington M.	Chicxulub and the K-T Boundary, Wed, a.m., Klösterle
Plado J.	Planetary Perspectives, Thu, p.m., Klösterle
Plymate T. G.	New Craters Posters, Tue, p.m., Gewölbe, Rathaus
Pope K. O.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Powars D. S.*	Terrestrial Craters II, Thu, a.m., Klösterle
Raitala J.	Terrestrial Craters I, Tue, a.m., Klösterle
Raitala J.	Planetary Craters Posters, Tue, p.m., Gewölbe, Rathaus
Rampino M. R.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Rampino M. R.*	Planetary Perspectives, Thu, p.m., Klösterle
Rebolledo-Vieyra M.*	Chicxulub and the K-T Boundary, Wed, a.m., Klösterle
Reimold W. U.*	Terrestrial Craters I, Tue, a.m., Klösterle
Reimold W. U.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Riller U.*	Terrestrial Craters I, Tue, a.m., Klösterle
Rocca M. C. L.	New Craters Posters, Tue, p.m., Gewölbe, Rathaus
Rondot J.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Rossi A. P.	New Craters Posters, Tue, p.m., Gewölbe, Rathaus
Rovey C. W. II	New Craters Posters, Tue, p.m., Gewölbe, Rathaus
Salge T.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Salge T.	Chicxulub and the K-T Boundary, Wed, a.m., Klösterle
Salminen J.	New Craters Posters, Tue, p.m., Gewölbe, Rathaus
Sandberg C. A.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Sazonova L. V.	Shock Metamorphism Posters, Tue, p.m., Gewölbe, Rathaus
Scherler D.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Scherler D.*	Terrestrial Craters II, Thu, a.m., Klösterle
Schmidt G.*	Planetary Perspectives, Thu, p.m., Klösterle

Schmitt R. T.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Schmitt R. T.	Chicxulub and the K-T Boundary, Wed, a.m., Klösterle
Scholz C.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Schönian F.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Schönian F.*	Chicxulub and the K-T Boundary, Wed, a.m., Klösterle
Schulte P.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Self-Trail J. M.	Terrestrial Craters II, Thu, a.m., Klösterle
Seydoux-Guillaume A.-M.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Shaw C. S. J.	Terrestrial Craters I, Tue, a.m., Klösterle
Sherlock S. C.*	Terrestrial Craters II, Thu, a.m., Klösterle
Sherlock S. C.	Planetary Perspectives, Thu, p.m., Klösterle
Shukla A. D.	New Craters Posters, Tue, p.m., Gewölbe, Rathaus
Shukla P. N.	New Craters Posters, Tue, p.m., Gewölbe, Rathaus
Shuvalov V. V.*	Modeling Impacts, Tue, p.m., Klösterle
Shuvalov V. V.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Shuvalov V. V.	Modeling Posters, Tue, p.m., Gewölbe, Rathaus
Sigurdsson H.	Terrestrial Craters I, Tue, a.m., Klösterle
Skála R.	Shock Metamorphism Posters, Tue, p.m., Gewölbe, Rathaus
Skála R.*	Shock Metamorphism, Wed, p.m., Klösterle
Spray J. G.*	Terrestrial Craters I, Tue, a.m., Klösterle
Spray J. G.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Spray J. G.	Planetary Craters Posters, Tue, p.m., Gewölbe, Rathaus
Spray J. G.	Shock Metamorphism, Wed, p.m., Klösterle
Spray J. G.	Planetary Perspectives, Thu, p.m., Klösterle
Stinnesbeck W.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Stinnesbeck W.*	Chicxulub and the K-T Boundary, Wed, a.m., Klösterle
Stöffler D.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Stöffler D.*	Chicxulub and the K-T Boundary, Wed, a.m., Klösterle
Stüben D.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Stüben D.	Chicxulub and the K-T Boundary, Wed, a.m., Klösterle
Svetsov V. V.*	Modeling Impacts, Tue, p.m., Klösterle
Tagle R.	Chicxulub and the K-T Boundary, Wed, a.m., Klösterle
Takata T.	Planetary Craters Posters, Tue, p.m., Gewölbe, Rathaus
Théry J. M.*	Terrestrial Craters II, Thu, a.m., Klösterle
Thoma K. *	Shock Metamorphism, Wed, p.m., Klösterle
Thomson K. C.	New Craters Posters, Tue, p.m., Gewölbe, Rathaus
Trepmann C. A.*	Shock Metamorphism, Wed, p.m., Klösterle
Trepmann C. A.	Planetary Perspectives, Thu, p.m., Klösterle
Tsikalas F.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Tuchscherer M. G.	Terrestrial Craters I, Tue, a.m., Klösterle
Turner P.	Terrestrial Craters II, Thu, a.m., Klösterle
Turtle E. P.	Modeling Impacts, Tue, p.m., Klösterle
Ugalde H. A.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Ugalde H. A.	Modeling Posters, Tue, p.m., Gewölbe, Rathaus
Urrutia-Fucugauchi J.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Urrutia-Fucugauchi J.	Chicxulub and the K-T Boundary, Wed, a.m., Klösterle
Versh E.*	Planetary Perspectives, Thu, p.m., Klösterle
Veto Akos E.	Terrestrial Craters II, Thu, a.m., Klösterle
Vishnevsky S. A.*	Terrestrial Craters I, Tue, a.m., Klösterle
Vityazev A. V.	Planetary Craters Posters, Tue, p.m., Gewölbe, Rathaus
Walton E. L.*	Shock Metamorphism, Wed, p.m., Klösterle
Warner M. R.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Warren P. H.*	Planetary Perspectives, Thu, p.m., Klösterle
Weiß R.*	Modeling Impacts, Tue, p.m., Klösterle
Weseler S.	Chicxulub and the K-T Boundary, Wed, a.m., Klösterle
Whitehead J.	Planetary Craters Posters, Tue, p.m., Gewölbe, Rathaus

Whitehead J.*	Planetary Perspectives, Thu, p.m., Klösterle
Wieland F.*	Terrestrial Craters I, Tue, a.m., Klösterle
Wieland F.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Winiarski D. H.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Wirth R.	Terrestrial Craters Posters, Tue, p.m., Gewölbe, Rathaus
Wittmann A.	Chicxulub Posters, Tue, p.m., Gewölbe, Rathaus
Wittmann A.	Chicxulub and the K-T Boundary, Wed, a.m., Klösterle
Wlotzka F.	Shock Metamorphism, Wed, p.m., Klösterle
Wünnemann K.*	Modeling Impacts, Tue, p.m., Klösterle
Yakovlev O. I.	Shock Metamorphism, Wed, p.m., Klösterle
Yakovleva O. A.	Terrestrial Craters I, Tue, a.m., Klösterle
Zegers T. E.	New Craters Posters, Tue, p.m., Gewölbe, Rathaus
Zhugin Ju. N.	Shock Metamorphism Posters, Tue, p.m., Gewölbe, Rathaus
Zurcher L.	Chicxulub and the K-T Boundary, Wed, a.m., Klösterle